

What is claimed is:

1. A gasket for use in a bipolar battery, said gasket being made from a hydrophobic material to prevent the creation of an electrolyte path between adjacent cells when mounted in a battery, the gasket further comprising:

a frame, designed to at least partially encompass a biplate when mounted in a bipolar battery; and

means for permitting gas passage through the gasket, wherein said gasket is made from a material with deformable properties to provide a sealing to a biplate when mounted in a bipolar battery, whereby an outer pressure tight seal of the battery is obtained.

2. The gasket according to claim 1, wherein the means for permitting gas passage through the gasket includes at least one channel interconnecting adjacent cells when mounted in a battery.

3. The gasket according to claim 2, wherein each at least one channel includes a hole in the gasket, said hole being in communication with the inside of the outer pressure tight seal in each cell when mounted in a battery.

4. The gasket according to claim 1, further comprising:
guiding means for controlling the position of a biplate during assembling of a bipolar battery.

5. The gasket according to claim 4, wherein the guiding means includes at least one boss.

6. The gasket according to claim 1, wherein the means for permitting gas passage are arranged on one distal end of the frame.

7. The gasket according to claim 1, wherein the material with deformable properties is elastic.
8. The gasket according to claim 6, wherein the material is a thermoplastic elastomer.
9. The gasket according to claim 7, wherein the gasket is made through an injection molding process.
10. A bipolar battery having at least two electromechanical cells comprising:
 - a case;
 - a negative endplate in contact with a negative electrode;
 - a positive endplate in contact with a positive electrode;
 - at least one set of a negative electrode, a biplate and a positive electrode arranged in a sandwich structure between said negative and positive endplates;
 - at least one separator arranged between each negative and positive electrode forming a battery cell, said separator including an electrolyte; and
 - a gasket in the shape of a frame, made of a hydrophobic material and arranged at least one of between each biplate and between a biplate and end terminal, whereby said gasket prevents an electrolyte path from one cell to another cell, wherein the gasket is made from a material with deformable properties to provide a sealing to each biplate and each end plate, whereby an outer pressure tight seal of the battery is obtained within the case, and wherein the gasket further includes means for permitting gas passage between adjacent cells through the gasket thereby creating a common gas space for all cells in the battery.

11. The battery according to claim 10, wherein the means for permitting gas passage through the gasket includes at least one channel interconnecting adjacent cells.

12. The battery according to claim 11, wherein each channel includes a hole in the gasket, said hole being in communication with the inside of the outer pressure tight seal in each cell.

13. The battery according to claim 10, wherein guiding means are provided in the gasket, for controlling the position of a biplate during assembling of a bipolar battery.

14. The battery according to claim 13, wherein the guiding means include at least one boss.

15. The battery according to claim 10, wherein the means for permitting gas passage are arranged on one distal end of the frame.

16. The battery according to claim 10, wherein the material with deformable properties is elastic.

17. The battery according to claim 10, wherein the material is a thermoplastic elastomer.

18. The battery according to claim 16, wherein the gasket is made through an injection molding process.

19. The battery according to claim 10, wherein the battery is selected from the group: NiMH, NiCd and NiZn.

20. A method for manufacturing a bipolar battery, comprising the steps of:

providing positive electrodes, separators, negative electrodes and biplates to construct a desired number of

battery cells inside a case, arranged between a positive endplate and a negative endplate;

providing a positive access point to the positive endplate, and a negative access point to the negative endplate;

providing a gasket, as defined by claim 1, between at least one of each biplate and between biplate and each endplate to create a common gas space within the battery;

providing a passage to the common gas space from the outside of the battery;

compressing all gaskets arranged between the positive endplate and the negative endplate to provide an outer pressure tight seal for the battery and to prevent the formation of electrolyte paths between adjacent cells; and

filling the separators with electrolyte.

21. The method according to 20, wherein the method further comprises a formation step after the separators has been filled, the formation step comprises at least two charging and discharging cycles.

22. The method according to claim 21, wherein the formation step comprises the steps of:

charging and discharging the battery with a liquid supply attached to the passage, and

charging and discharging the battery without a liquid supply attached to the passage to remove excess liquid from the battery.

23. The method according to claim 22, wherein the liquid is selected to be at least one of water and electrolyte.

24. The method according to claim 20, wherein the step of filling of the separators with electrolyte comprises:

attaching an electrolyte reservoir to the passage to the common gas space,
evacuating air from the common gas space,
filling electrolyte into the common gas space, and
transferring electrolyte to the separators from the common gas space.

25. The method according to claim 24, wherein the air is evacuated from the common gas space through the passage before the electrolyte is filled into the common gas space.

26. The method according to claim 24, wherein the air in the common gas space is evacuated using an opening being separate from the passage, whereby the electrolyte is introduced into the common gas space during evacuation.

27. The battery according to claim 10, wherein the battery is provided with a positive and negative terminal connector being in contact with the positive and negative endplates, respectively, said terminal connectors being adjustably arranged to the case.

28. The battery according to claim 27, wherein a first end of each terminal connector is arranged to be attached to each endplate, and a second end, distal from the first end, is arranged to be fasten to the case of the battery.

29. The battery according to claim 28, wherein each terminal connector is attached to the respective endplate via a feed-through, which is secured in the case.

30. The battery according to claim 28, wherein the second end of each terminal connector is bent, and is fastened to the case by inserting the bent portion into one out of one or more grooves arranged in the case.

31. A bipolar battery comprising the gasket of claim 1.
32. A starved electrolyte bipolar battery comprising the gasket of claim 1.
33. The gasket according to claim 1, wherein the bipolar battery is a starved electrolyte bipolar battery.
34. The battery according to claim 10, wherein the battery is a starved electrolyte bipolar battery.
35. The method according to 20, wherein the method is for manufacturing a starved electrolyte bipolar battery.
36. A gasket according to claim 4, wherein the guidance means comprises the gasket of the gasket.
37. The battery according to claim 13, wherein the guidance means comprises the rim of the gasket.